

AK

Notice of Allowability	Applicant(s)	Applicant(s)	
	10/079,135	PAN, JING-JONG	
	Examiner	Art Unit	
	Sarah Song	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to request for continued examination filed on 10 May 2004.
2. ☒ The allowed claim(s) is/are 1-28.
3. ☒ The drawings filed on 02/20/02 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on ^{March 31,}~~May 10,~~ 2004 has been entered.

2. Applicant's communication filed on March 31, 2004 has been carefully studied by the Examiner. The arguments advanced therein, considered together with the amendments made to the claims, are persuasive and the rejections based upon prior art made of record in the previous Office Action are withdrawn. Claims 1 and 13 have been amended. New claims 21-28 have been added. Claims 1-28 are pending.

Allowable Subject Matter

3. Claims 1-28 are allowed.

4. The following is an examiner's statement of reasons for allowance: The prior art cited is the most relevant prior art known. However, the invention of claims 1-28 distinguishes over the prior art for the following reasons.

5. Emkey et al. discloses a first optical fiber and a first multimode optical fiber segment attached to an end of the first optical fiber. Emkey et al. also discloses second optical fiber also having a multimode optical fiber segment attached to an end of the second optical fiber. Emkey et al. further discloses an optical element disposed between the multimode optical fiber segments. Emkey et al. further discloses that coupling losses are at a minimum when the

Art Unit: 2874

multimode optical fiber segments have a quarter pitch length and are butt-coupled (column 6, lines 4-7).

6. Thual et al. discloses a first optical fiber; a first multimode optical fiber segment attached to an end of said first optical fiber, said first multimode optical fiber segment having a step index of refraction and axially aligned with said first optical fiber, said first multimode optical fiber segment having a first length; a second multimode optical fiber segment attached to said first multimode optical fiber segment, said second multimode optical fiber segment having a graded index of refraction core and axially aligned with said first multimode optical fiber segment, said second multimode optical fiber segment having a second length, said first and second lengths selected to define a collimation and focusing function for light from and to said first optical fiber; a second optical fiber; a third multimode optical fiber segment attached to an end of said second optical fiber, said third multimode optical fiber segment having a step index of refraction and axially aligned with said second optical fiber, said third multimode optical fiber segment having a third length; and a fourth multimode optical fiber segment attached to said third multimode optical fiber segment, said fourth multimode optical fiber segment having a graded index of refraction core and axially aligned with said third multimode optical fiber segment, said fourth multimode optical fiber segment having a fourth length, said third and fourth lengths selected to define a collimation and focusing function for light from and to said second optical fiber, said fourth multimode optical fiber segment having an endsurface opposite said third multimode optical fiber segment facing said endsurface of said second multimode optical fiber segment.
7. Thual et al. further teaches that the combination of the first multimode fiber segment and the second multimode fiber segment is advantageous for increasing the working distance

Art Unit: 2874

(coupling distance) without increasing coupling losses, thereby avoiding the need for butt-coupling.

8. Stone discloses a plurality of dielectric coatings directly on an optical fiber segment opposite another optical fiber segment, said plurality of dielectric coatings forming a wavelength-dependent optical filter.

9. Emkey et al. discloses butt-coupling (abutting of fiber ends) but does not disclose or suggest the first and second multimode optical fiber segments as claimed. Thual et al. teaches the combination of the first multimode fiber segment and the second multimode fiber segments is advantageous for increasing the working distance (coupling distance) without increasing coupling losses, thereby teaching away from butt-coupling (abutting of fiber ends). Therefore, the combination of Emkey et al. and Thual et al. would not suggest the fourth multimode optical fiber segment abutting the plurality of dielectric coatings, which are directly on an endsurface of the second multimode optical fiber segment. Stone does not remedy the deficiency.

10. Therefore, the prior art of record does not reasonably suggest the additional limitation for, "said fourth multimode optical fiber segment having an endsurface opposite said third multimode optical fiber segment facing said endsurface of said second multimode optical fiber segment and abutting said plurality of dielectric coatings on said endsurface of said second multimode optical fiber segment" as claimed in claim 1. The prior art of record also does not reasonably suggest the method of making the corresponding structure as claimed in claims 13 and 21. Claims 2-12, 14-20 and 22-28 are allowable as depending therefrom.

11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

Art Unit: 2874

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

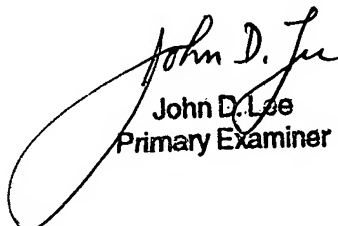
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SUS


John D. Lee
Primary Examiner